Strategic management tools and governance structures in urban water services - a research proposal for Mexico

Ricardo Sandoval Minero

Strategic management tools and governance structures in urban water services – a research proposal for Mexico

Ricardo Sandoval Minero* and M. Nakhla*

* Centre de Gestion Scientifique. Ecole Nationale Supérieure des Mines de Paris. 60 Bvd. Saint-Michel 75272 Paris, FR
(E-mail: ricardo.sandoval_minero@ensmp.fr ; michel.nakhla@cgs.ensmp.fr)

Abstract
Urban water supply in developing countries poses a growing challenge for the complexities of the processes involved, as well as for the extent of the potential consequences of the persistence of the ongoing problems. In the case of Mexico, during the last decades, a set of changes and adjustments in terms of the institutional environment can be identified, which however have led to the emergence of a set of varied institutional arrangements in the local level. In this paper, a research project is proposed. First, a brief hystorical analysis is proposed, in order to identify possible traces of the institutional environment's evolution, in reference to the different responses implemented within the States and Municipalities. Secondly, a more detailed analysis is suggested, in order to explore the role of performance evaluation as a means for ensuring internal and external transaction efficacy, where the operator's management performance as an agent should be assessed in terms of the effective, equitable and sustainable attainment of the system's objectives; the conception and implementation of a strategic performance management tool is proposed, both as a governance enabling device and as a learning tool for the researcher and the organization.

Keywords
Management; new institutionalism; decision support systems; sustainable development; developing countries.

INTRODUCTION

Urban water provision poses a major challenge in developing countries, since a large part of the population lives in medium-sized and bigger cities, whose water sources are becoming each day more scarce and menaced by pollution and competition with other users. There is a need for building new infrastructure – mainly for waste water collection and treatment –as well as for substituting older installations and equipments; in general, investment costs and even operating ones are not sufficiently recovered and administrative practices don't always lead the systems to a sustainable operation; the lack of both career stability and competitive remuneration prevents the consolidation of a strong work force in this sub-sector; organizational structures and regulations don't always support good management practices; water users and citizen's concerns are also usually disregarded, leading to vicious circles of distrust and lack of support and attention. Simultaneously, the lack of adequate practices for land use development, solid waste management and risk prevention, complicate the urban water system's environment. In this context, facing the challenges introduced by the need for moving towards an integrated urban water management model, which should adequately incorporate sustainable development issues, would pass through the improvement of management practices, even for revising urban water governance structures.

The challenge of urban water supply in Mexico

Mexico is a federal, representative and democratic republic, with elected authorities in the Federal Government, 31 State governments, the Capital city – *Distrito Federal* – and 2438 Municipalities. By the Constitution, water belongs to the Nation and the federal authority – through the National Water Commission (CNA, for its Spanish acronym) – concentrates the most relevant jurisdiction attributions, both in water management and in water supply regulation, while State authorities show very different capacities, structures and scopes in this field. Since 1983, the Municipalities are supposed to be primarily in charge of the operation and development of every water supply and sanitation system, in urban and rural settings – including the nearly 190 000 population centers or *localidades*, 98% of which have less of 100 people and are located in rural dispersed areas –, with the subsidiary help of State authorities, theoretically in exceptional cases.

Presently, 550 cities house more than 15 thousand inhabitants each, accounting for 62.8% of total population in the country; amongst them, 123 cities have a population over 100 000 inhabitants, where 11 cities house more than a million people (INEGI 2005). Institutional arrangements for urban water supply and sanitation are quite heterogeneous. Since the transferal of operating responsibilities to the municipal authorities, the possibility for the State authorities to take charge of the systems remained, when justified by the lack of local capacities, but in some states the process had different outcomes. Presently, in about two thirds of the 31 federated states it is the State authority that rules and manages urban water systems; in the other, these services have been transferred directly to the municipalities more than 10 years ago; some urban areas have inter-municipal utilities and in some other, state dependent public operators are in charge of local urban water systems; very few systems have been delegated to a private operator and even a mixed firm exists. Federal government, by means of the CNA, still keeps control of some relevant budgetary and normative levers, while State authorities strive for gaining wider normative, supporting or even operating capacities.

Institutional diversity in urban water management in Mexico could be seen as the result of a series of successive implementation of policies facing a rapid urbanization process – Mexico's population grew from less than 25 millions in 1950, of which only 47% lived in cities with more than 2500 inhabitants, to more than 103 millions in 2005, with 76.5% of urban population (CNA, 2007b). Influence of different policy paradigms, remarkably those of "new public management" in late 80's, introduced policies seeking to implement decentralization, private sector participation, market mechanisms, as well as better accountability and social participation mechanisms. The most important reform undertaken, the constitution of municipal operators structured as semi-independent public enterprises – with their own accounting, assets and governing bodies –, has shown very uneven results, while CNA has kept a double role, in one hand as a "counterpart" of Municipalities and States in setting up the "master plans" and co-financing related investment actions, which were expected to improve water supply's efficiencies and coverage, and in the other, as the regulatory agency in charge of inspecting users' practices and enforcing law for water rights administration and water quality control, among many other functions. Attempts to implement private sector participation have failed, remaining very limited in number and scope and mainly being promoted for financing long-term supply and treatment facilities (Pineda-Pablos, 2002; Castro, 2007).

In terms of results, even when urban water and wastewater collection coverage is rather high – over 95% for cities with more than 2500 inhabitants, while 94.7% for sewage connections–, less

than a half of the population has continuous supply (BM, 2006), while wastewater treatment accounts for only 36.1% of collected flows, with very variable efficiency levels (actually removing less than 24% of total DBO generated); besides, invoice collection is estimated around 81% of total billed consumption and unaccounted-for water is calculated in 42%, which renders a global efficiency under 50% (CNA 2006, 2007a). Sustainable provision of water services is threatened simultaneously by the financial, administrative and technical weaknesses of municipal operators and by the rapid reduction of reliable water sources, the deterioration of watersheds – in 30 years, the number of overexploited aquifers has tripled, potentially affecting 60% of groundwater sources in the country, while 47.8% of surface waters are considered as polluted or heavily polluted in terms of their COD levels (CNA, 2007a) –, the growth in conflicts between users, the reduction of subsidies and the growing competition for financial resources. It is expected that, in the year 2030, 53% of the population will live in 35 cities with more than 50 000 inhabitants, mostly concentrated in the central and northern parts of the country (CNA, 2007a) – where sources are becoming scarcer and conflicts more frequent; in the future, more than 100 million people would be affected if the present condition persists in the urban water supply sector. The need for setting up a proper integrated urban management model seems to be a difficult task but also a potential tool for sorting out from this complex situation.

One research question that could be posed is why, under similar institutional environments, so many different institutional arrangements have emerged throughout the country. In some states, as Guanajuato, water supply is under the jurisdiction of each of the 46 Municipalities; in some others, as Querétaro, the State authority operates water supply systems throughout its territory, with the exception of one city; in others, like Baja California, there is a State-dependent operator in charge of the city of Tijuana – one of the best managed water supply systems in Mexico – while in others, like Nuevo León, the inter-municipal operator of the capital metropolis, Monterrey, is growingly taking part in the development of services in other cities in the State, including rural ones. Talking about private sector participation, the failure of this policy – in terms of its objectives of attracting investment capitals, extending services to the poor and liberating public funds while improving efficiencies in concessioned systems (Castro, 2007) – could have been a matter of a failure from the part of regulating bodies, a consequence of the difficulties for implementing new tariff structures or of the paralysis facing the sharing of risks (Breuil & Nakhla, 2003), but a more detailed analysis could be worthy. Specifically, the very different nature of institutional environments from the countries whose models have inspired the private participation schemes from the 80's, in terms of their stability and the relative simplicity of their operation should be analyzed – since those models aren't probably well suited to face problems like urban development lawlessness or the need to build extensive infrastructure, circumstance which could perhaps explain the good performance of privatization schemes (such as in England) or leasing contracts (such as in France) in those settings. Disregarding the public or private nature of the capitals involved in the extension and the operation of urban water systems, it is true that municipal operators, in spite of the reforms implemented in the 90's aiming to transform them into public enterprises, are now jammed in a system of overlapping relationships of normative, supporting, cooperative and subordinating nature dealing with its federal, state and local counterparts. As Breuil (2004) describes it, public urban water supply is characterized by the absence of a formal contractual framework and thus of specific objectives, where self-control predominates and a strong political interference remains in price setting. Moreover, if dissecting water supply and politics has been seen as naïve (Schwartz & Schouten, 2007), due to "water sector realities" in developing countries, from the figures and perspectives presented, the need for finding alternative ways for improving governance structures and institutional settings seems well justified.

Understanding the origin and dynamics of the institutional diversity in the Mexican water sector, both from the national context and from the local specificities, in particular for trying to identify some clues or paths from the analysis of the institutional arrangements in place in different settings, seems to be instrumental for opening ways to the design of innovating public policies in this sector. By its own nature, as well as because of the long-term questions raised by the quest for integrated or sustainable management of urban systems, two kinds of questions can be posed. First: Is there a relationship between the evolution in the institutional environment, the governance structures and the systems' capacity to ensure a sustainable provision of water services in the urban context? And second: Is there a place for strategy formulation and strategic management within such a complex setting as the one we have in developing countries? In other words, what have been the feasibility, the role and destiny of strategy formulation and implementation in this context? Would the implementation of a strategic performance management process help to improve learning about the issues linked to the transformation of a governance model in sake for improving the system's sustainability? In this paper, a research proposal is outlined for addressing these issues.

THEORETICAL FRAMEWORK AND METHODS

Rationale and proposed methodology

The primary aim of this research is to analyze the relationship between governance structures and performance in the context of a set of Mexican urban water supply operators, specifically focusing on the role of information and strategic performance management processes and tools. In a first stage, a thorough revision of the origins and characteristics of a selected set of urban water supply governance structures within the country would be undertaken. Then, since urban water supply is a long term subject, the actual and potential role of strategic management processes – or, eventually, the absence or the obstacles for implementing such kind of processes – would be studied. In a second phase, the implementation of tools for strategic performance management – a strategic scorecard, dashboard or control panel, developed through a participatory and recursive process of selection of indicators, evaluation and feedback – is envisaged as a potential mean for exploring the main issues affecting governance in urban water supply, both from an environmental as from an internal institutional approach.

New institutional economics is proposed as the basic theoretical framework for this research (Williamson, 1996; Powell & DiMaggio, 1991; Ménard, 2003), complemented with the exploration from a cognitive approach to contract theory (Girin, 1995) and strategic management (Bouvier, 2004) and from stakeholder theory (Freeman, 1985). A specific approach of *intervention research* is suggested, where the presence and eventually the implementation of management tools is considered as a structuring and learning device capable of revealing unattended knowledge about "organizational operation, the piloting of transformation and the exploration of new [courses of action]" (Moisdon, 1997; 2006). In this case, the eventual implementation of an adaptation of a *Balanced Scorecard* (Kaplan and Norton, 1992) or *tableau de bord* kind of management tool is being considered *a priori* as a potential pivot for a second phase of the field exploration; a specific process for the implementation of a strategic performance management tool would be used to analyze the transit towards a different governance model, in which an adequate consideration of stakeholders' criteria and priorities should be incorporated, as well as the proper sustainable development criteria.

In terms of a definition of the problem, an adequate articulation between its components should be attained. First, departing from a historical and a field analysis from a neo-institutionalist approach, some hints and orientations about the relationship between governance structures,

institutional arrangements and environment should be obtained, from the exploration of how the different transaction classes identifiable within the Mexican water sector are translated into governance structures, partially as a response to the implementation of sector-wide policies, as well as specific to each local setting. Secondly, the actual and potential role of information sharing, performance assessment and strategic management would be explored more deeply in at least one case, taking into account the cognitive and relational aspects of the issue. A general model for setting up a strategic management tool would be proposed, with the triple objective of incorporating sustainable development and integrated management criteria, allowing stakeholders participation in the systems construction and operation, as well as considering a flexible form for elucidating preferences and aggregating performance indicators, according to the multi-user, multi-criteria nature of this kind of system.

It most be pointed out that previous works have shown the potential of new institutional economics for the analysis of urban water supply's issues, mainly around the evaluation of reforms where the collectivity has the choice (or has been given the choice because of the reforms) between public management and delegation to private operators (Breuil, 2004; Fauquert, 2007; Guérin-Schneider 2001; Ménard and Shirley 2001; Ménard and Saussier 2002). These are valuable sources for the construction of an analytical grid, without loosing sight of the more general intention of this project, in terms of the scope of institutional arrangements that are envisaged to be studied.

Building an institutional analysis grid

The construction of the analytical grid is in process to the date this proposal is being written. In general terms, new institutional economics would furnish a conceptual grid which should be useful to analyze, through a historical exploration as well as through an in-depth field analysis, the relationship between the changes in the institutional environment – mainly those related to the evolution in the resources related to urban water provision and the implementation of specific policies, projects, organizational structures and constraints –, and the local responses in form of specific institutional arrangements, from which a set of transaction and assets characteristics, as well as their contractual implications, would be proposed (Baudry, 1995).

For characterizing the kinds of transaction present in urban water supply and sanitation, a model for identifying the nature of the agency relationships would be proposed from the cognitive approach of J. Girin (1995), in which each kind of mandate – whether it is clear or difficult to make explicit – and each kind of task – according to its inherent degree of difficulty – calls for a different interaction between the agent and the agency – that is, a different transaction kind – which implies different follow-up devices and different suitable indicators (Table 1).

We propose to characterize as different transactions each of the main functions to be performed by the urban water operator as an agent, where the nature of the task and even the kind of mandate would vary according to the institutional environment and arrangements. That is, one specific function which would correspond to a clear mandate for performing a simple task in a specific institutional environment can turn into a *confuse* function (difficult to make explicit) or involve a more difficult task in another institutional environment or even in another moment in institutional environment's or in the agency's relationship evolution – perhaps because of the cognitive structure or the information imbalances between the parties, the complexity of information sharing procedures and decision making rules, the gap between present and required capacities and the nature of the assets involved in the performance of the task.

In terms of transaction costs economics, the kind of mandate and the nature of the task are related to the simultaneous presence of bounded rationality and opportunistic behavior (since a complex task and a confuse mandate would perhaps leave more space to agents for getting informational rents), and thus, each urban water function could be related to different levels of transaction costs and, for each setting, indicate whether an institutional arrangement would leave more or less place for failures in the system's governance.

A very important requisite for performing this kind of exploration is to test a definition of specific agents, functions, means – conceived as the set of resources available to each agent to perform the required task – and communication channels for interacting with the principal. An agent transforms resources into service outputs while being subject to a set of constraints, and leading the organization to a different state of value as perceived by its stakeholders. Another fundamental dimension for the analysis is the extent to which reliable data will be available, in order to allow a numerical analysis of the transaction costs which should ideally lead to effectiveness and efficiency analyses, including the effects of the delays related to performing tasks of similar complexity under different institutional settings.

TABLE 1: Relationship between kinds of mandate, difficulty of the tasks, transaction interactions and suitable numerical indicators.

	Kind of mandate			
	Clear		Confuse [a]	
Nature of task:	*Simple*	*Complex*	*Simple*	*Complex*
Initial interaction	Precise specification of mandate		Vague declaration of mandate. Responsibility limitations. Definition of means.	
Intermediate interaction	State of advancement	Intuitive estimates of advancement	Precise accounts and reports. Evaluation of committed means.	Simplified accounts and reports. Evaluation of committed means.
Final interaction	Results evaluation		Precise accounts and reports. Eventually, construction of results.	Simplified accounts and reports. Construction of results.
Numerical indicators	Advancement. Results.	Results.	Activity	

a. Difficult to be made explicit.
Source: adapted from Girin (1995).

In principle, it seems to us that this kind of analysis would help explaining why some contractual models work right in stable environments linked to precise definitions of means and expected results, even when the tasks involved are complex, while in other settings they tend to fail or lead to institutional deadlocks. It seems worthy to undertake an exploration of the communication processes having place between citizens, urban water users, mediating parties, municipal authorities, the directive council, the operator's management and even the State and Federal legislative and executive branches of government which take part in some of the core management processes for urban water services provision – such as tariff setting and approval, budget allocation, demand for information, legal inspection and evaluation activities. Moreover, it could be useful for exploring the cognitive issues linked to the principal-agent relationship and, instrumental for the purposes of this research, for assessing the potential role of information and management tools and systems within governance models, necessarily conceived as contingent to the local cognitive and institutional characteristics.

Strategic Management Tools and Governance

As it was suggested before, the conception and implementation of a tool for piloting the strategic performance management of a urban water supply system is considered as a potential way for bringing out a deeper learning on the way the related management process are structured within the organization's operation, on how the transformation takes place and even on how new emerging issues can be dealt with, within an intervention research model oriented to the revelation of unattended aspects of the processes under study, rather than trying to verify a specific hypothesis (Moisdon, 2006).

Nevertheless, from a previous exploration of these issues, it has become apparent that conceiving performance piloting tools could contribute to the construction of a consistent governance model, in terms of its capacity for reacting to external and internal constraints, "mobilizing a panel of tools belonging to three key dimensions: the contractual, the institutional and the social ones", while satisfying the system's overall objectives (Breuil, 2004, p. 272). From an initial exploration stage, setting up a tool similar to the Balanced Scorecard (Kaplan and Norton, 1992) would seem appropriate to take into account the objectives different from the value of the firm that can be suitable in the case of a water operator, being a monopoly which must fulfill several performance criteria under a set of constraints. For instance, facing the arguments of the stakeholder theory (Freeman, 1984), it has been proposed to utilize an "enlightened balanced scorecard" to bring the agent an aggregated measure of performance, so to allow him to better choose the appropriate levers for improving performance (Jensen, 2001). Of course, the way the strategy is elicited for incorporating it to such a kind of a scorecard, the issues related to the aggregation of performance measures and stakeholders preferences' elicitation processes, the inclusion of sustainable development objectives – perhaps even beyond the preferences of present stakeholders – are issues that must be explored, specially after a first field research stage will have been performed. Moreover, taking into account the usual effects of the implementation of any management system within an organization, even the professional and identity processes should be addressed and analyzed.

A sustainable development framework

In principle, a working definition for incorporating sustainable development to strategic management in urban water services can be that proposed by the ECLAC (1991, 24-25): "[Sustainable Development implies] a dynamic balance between all capital forms or assets that participate in the effort of economic and social development of the countries, in such a way that the resultant use rate of each capital form does not exceed its own reproduction rate [...] Among the most important capital forms, the following can be highlighted: the *human* capital (where people also represent the development subject), the *natural* capital, the *institutional* assets (decision systems), the *cultural* assets, the *physical* capital (infrastructure, machineries and equipment) and the *financial* capital"[1]. In spite of trying to analyze the consequences of the operator's activities on a set of economic, social and natural environment indicators, we propose to explore the tracking of the state, pressures and dynamic response of these resources categories, as they appear to the operator's as being available and behaving in their system's environment and as they would be consumed or transformed within it; the rationale would be that, as long as the utility can dispose of these resources in a sustained way, while not contributing importantly to their imbalance for the rest of the organizations belonging to the same system's environment, its chances to perform in a sustainable way will be greater.

[1] In (Sandoval & Palombo, 2007), the use of this definition is proposed as a reference for performing a self-assessment exercise of a urban water supply system's sustainability.

For the rest of the project, a fundamental orientation could emerge from this model, in terms that the agent would be expected to perform the set of tasks defining urban water services in a specific context – some of which would be likely to be expressed in precise terms, some of them not – making use of a set of resources and subject to the constraint of not depleting or increasing/restoring some of these related resources. In terms of the analysis of the consistency between means and expected results, this definition can furnish an analytic grid, useful for assessing the associated difficulty degree and, at the same time, since the fulfillment of the objectives of the system is related to the extent to which the agent satisfies the stakeholders' expression of an aggregated "function".

In terms of the implementation of a scorecard or a dashboard, it can be noted that there have been prior attempts to use the Balanced Scorecard to incorporate the evaluation and alignment of social and environmental concerns to the long term strategic management of a firm (Figge *et al.*, 2002). Indeed, the "four perspectives" proposed in the Balanced Scorecard model can be identified with the set of sustainability resources from the ECLAC's definition. The problem lies on the procedure for assessing whether the firm's performance has effects on its economic, environmental and social value in a balanced way. Regarding the participatory nature of a shared construction of a strategy, a self-evident requirement if an alignment between the agency's and the principal's objectives is to be attained, it has also been proposed to explore different methods for incorporating tacit knowledge from expert workers into the strategy formulation to be integrated in the scorecard (Abernethy *et al.*, 2005), which could also be useful to include the external stakeholders perceptions into the model. Anyway, the relevance and appropriateness of building and implementing such a model in the context of the proposed resarch remains to be tested and defined during the process of analysis.

INITIAL INSIGHTS FOR THE DEFINITION OF THE RESEARCH FIELD

The institutional environment

At a first stage, some basic elements of the institutional environment in Mexico's water supply sector should be identified. The field of research would consist, in an initial phase, of the analysis of the evolution of water supply institutional environment and the identification of the emergence of different institutional arrangements in some specific local settings. Figure 1 shows a graphic inter-linkage between the emergence of the different administrative public bodies which were expected to take charge of urban water infrastructure development, as long as urbanization and political plurality grew throughout the country, while different external frames of reference were also were exerting a strong influence in policy making, which was

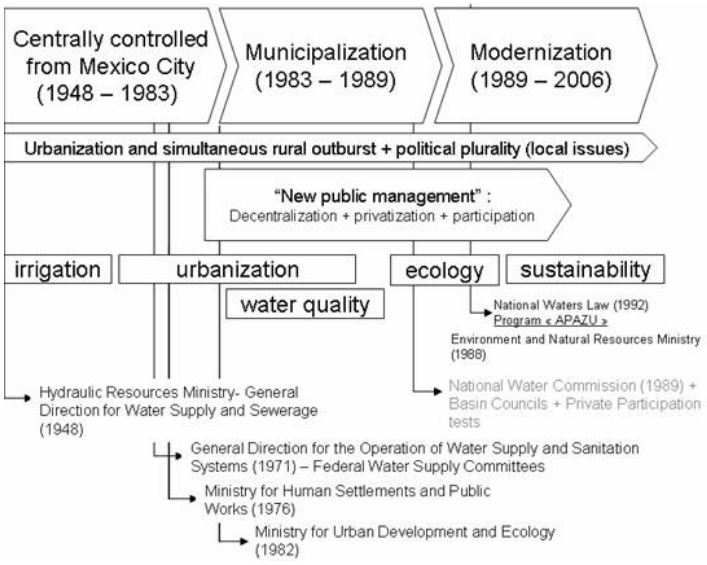

Figure 1 **Institutional evolution in Mexican water supply sector** (author's construction based on Pineda-Pablos 2002)

being mainly conceived and implemented from the federal offices in charge of the issue (Pineda-Pablos, 2002).

An emphasis should be put on analyzing the last 25 years, from the municipalization wave and the related public tax and expenditure reforms. The rationale and the policies implemented to create and promote the evolution of municipal operators built as public firms, with a participatory governing body and a supporting scheme of master plans and financing programs would be analyzed in terms of their impact on investment in the sector and the evolution of a set of different cities. Although there are no homogeneous and complete sources of information on the different public and private investment in urban water supply for that period (1983-1989), at least a set of general trends would be sought. For the last period, the adaptation of the chosen cities and States to the evolution in demographic variables, socio-political and financial environments, related to their outputs and performances, is expected to reveal some key processes regarding the role of the structuration of the relationships between collectivities and operators. A detailed exploration should be made in order to elucidate whether some public policies can be considered as *institutions* in terms of their stability, degree of abstraction and generality and their normative character; their implementation devices and processes should also be analyzed.

A possible set for analyzing the proposed evolution would include:

- Querétaro State, where state authority still operates water supply systems in every municipality but one; the capital city's performance is amongst the best in the country.
- Coahuila State, where there is a supporting state authority, as a mediator between federal and local authorities; the city of Saltillo has now a private participation scheme based on the constitution of a mixed enterprise with interesting outputs.
- Morelos State, where a supporting state authority has recently been created
- Aguascalientes State, whose capital was object of the first important integrated concession of water services to a local partner of Véolia
- Quintana Roo State, where the state authority still controls municipal water supply, with the exception of Cancún, where there is a concession to a local partner of Ondeo.
- Baja California State, where the city of Tijuana, operated by a state-dependant operator, is reputed to be the best managed water utility in Mexico.

A detailed analysis in terms of the performance indicators available, the institutional characteristics and comparability criteria would help to approach this analysis with more pertinence and precision.

After a first stage, where the evolution of public policies in terms of their institutional consequences and the emergence of local arrangements would be analyzed, in a second stage some elements would be sought to study which of these local responses have led to a more effective attainment of social goals. An identification of the core concepts for an institutional analysis would be instrumental, that is, the principal-agent relationship, the governance structures, institutions or micro institutions (Ménard, 2003), the rules and the implementation devices constituting the institutional environment. A selection of three representative cases – for instance, one where water supply would have been mantained under the centralized control of the State authority, another one where municipalities rule the services and a third one having a mixed structure – is envisaged to delimit the research's scope.

Inherent to the idea of exploring alternative governance structures in terms of their comparative effectivenes for attaining social goals, there is the idea of defining in a broader fashion a urban

water supply system's objective structure, taking into account the expected outputs in terms of quality and reliability of services, but also its performance *vis-à-vis* sustainability issues, that is, the way in which the system affects the resources whose utilization right is exerted by the agent and the internal equilibria concerning the utilization and complementarity of those resources, based on the definition presented in the previous section. This formulation leads to the idea that the agent should need, in order to guide his decisions towards a better overall long-term integrated performance of the system, an aggregated way for evaluating the consequences of those decisions. The existence (or the absence) of information systems or procedures leading to this kind of integrated evaluation of performance is considered as a potential analytical pivot for exploring governance mechanisms, as they imply internal and external transactions and interactions with internal agents and with external stakeholders. Therefore, the implementation of a strategic management tool could serve as an auxiliary research learning device to explore and follow-up how the effectiveness of transactions could be improved in a specific case. The collaboration with a consulting firm to conceive and set up a model of Balanced Scorecard for water utilities is envisaged, in which consensual bottom-up evaluation of performance and specific performace criteria, related to water supply sustainability, would be sought[2].

EXPECTED RESULTS

This research project could show different outputs:

- It is expected to shed light on the origin of governance structures for urban water supply, whose diversity facing a similar policy context calls for an thoughtful exploration
- A relationship between different local governance structures and performance, in terms of the transactional facilitation leading to effective, equitable and efficient results, in a sustainable fashion, would be sought
- The role of performance monitoring in internal and external agency relationships would be explored, if possible undertaking a process of "governance engineering" by the conception and implementation of a strategic dashboard as a tool for revealing a deeper learning of the organizational implications of performance steering in relation to effective governance.
- Ultimately, a more general model for the analysis of governance structures in urban water supply and sanitation, even a specific proposal of a model linked to the implementation of a strategic management tool could be proposed.

CONCLUSIONS

New institutional economics, in one hand, seem to furnish a powerful analytic grid to explore whether some institutional arrangements show a greater effectiveness and, in that sense, if some kind of orientation in terms of public policy conception and implementation can be obtained. In the other hand, reflecting on the implications of embedding sustainable development issues in the definition of the overall objectives of a urban water supply system, thus constituting the broad "mandate" to the operator, conceived as the agent, leads us to the exploration of strategic performance management as a way to improving transactions effectiveness and, in principle, as a possible device for reaching a deeper learning on how agency relationships occur within the organization and in its interactions with the external stakeholders. Being at an initial stage, this research can still be better outlined, specially when fieldwork comes.

Urban water supply in Mexico, for the challenges it poses to the Nation's development, can help raising important questions about the ways public policies can favor institutional environments enabling more effective transactions towards the sustainable fulfillement of social goals.

[2] In González *et al*., 2006, a model proposed for a South American water operator is proposed.

Performing the proposed exploration can shed a light to overcome the complex problem of ensuring an efficient long-term provision of urban water services, which affects a very large part of the population of the country.

REFERENCES

Abernethy, M., Horne, M., Lillis, A., Malina, M., Selto F. (2005) Building Causal Performance Models from Expert Knowledge. Management Accounting Research 16(2): 135-156.

Banco Mundial (2006). México: revisión del gasto público para infraestructura. Banco Mundial. Departamento de México y Colombia. México. Translated from Saltiel G. and Webb, S. (2005) *Mexico: Infraestructure Public Expenditure Review (IPER).* Report No. 33483-MX. The World Bank. Washington D.C.

Baudry, B. (1995). L'économie des coûts de transaction. (*Transaction costs Economy*). In Capul, J.-Y. (Dir.). Les nouvelles théories économiques. Cahiers français No. 272 (juillet-septembre). La documentation française. Paris, 12-20.

Bouvier A. (2004). Management et sciences cognitives. (*Management and cognitive sciences*). Presses Universitaires de France, Collection «Que sais-je?», Paris.

Breuil L. and Nakhla M. (2003). Réformes des services publics locaux dans les grandes villes des pays émergents : quel(s) modèle(s) pour quels objectifs ? - Illustration à partir du cas de la gestion des services publics d'eau. (*Reforms in public local services for big cities in emerging countries : what models for what objectives*) Colloque Politiques et Management Public. Strasbourg, Mardi 25 November 2003.

Breuil L. (2004) Renouveler le partenariat public-privé pour les services d'eau dans les pays en développement - Comment conjuguer les dimensions contractuelles, institutionnelles et participatives de la gouvernance? -. (*Renewing public-private partnerships for water services in developing countries – how to conjugate contractual, institutional and participative dimensions of governance*). PhD Thesis. Sciences de l'eau - Gestion, ENGREF.

Castro, J. E. (2007). La privatización de los servicios de agua y saneamiento en América Latina. (*Water and sanitation services privatization in Latin America*). *Nueva Sociedad*, No. 207, ISSN: 0251-3552, <www.nuso.org>

Comisión Nacional del Agua (2007a). Estadísticas del Agua en México. (*Water statistics – Mexico*). Semarnat. Mexico. <www.cna.gob.mx>

Comisión Nacional del Agua (2007b). Situación del Subsector Agua Potable, Alcantarillado y Saneamiento. (*State of the water and sanitation sub-sector*). Semarnat. México. <www.cna.gob.mx>

Economic Commission for Latin America and the Caribbean (ECLAC). El desarrollo sustentable: transformación productiva, equidad y medio ambiente (*Sustainable development: productive transformation, equity and environment*) ONU-CEPAL, 1991. Santiago de Chile.

Fauquert, G. (2007) Les déterminants du prix des services d'eau potable en délégation - Contribution à la régulation locale des services publics de l'eau potable. (*Determinants of*

delegated water services pricing – A contribution to local regulation of public water supply services). PhD Thesis, Sciences de l'eau - option Gestion, ENGREF - Laboratoire de Gestion de l'Eau et de l'Assainissement, ENGREF 07ENGR0002 p.396.

Figge, F., Hahn, T., Schaltegger, S. and Wagner, M. (2002) The Sustainability Balanced Scorecard. Linking sustainability management to business strategy. Business Strategy and the Environment, 11, 269-284.

Freeman R. E. (1984). Strategic Management: A Stakeholder Approach. Pitman, Boston.

Girin, J. (1995). Les agencements organisationnels (Organizational agency processes), in Charue-Duboc (Ed.). Des savoirs en action. Contributions de la recherche en gestion. (Knowing in action. Contributions from management research.) L'Harmattan, Paris, 233-279.

González, J. I., Bonilla Sebá, E. and Guerrero Chaparro G. (2006). Plan de gestión, Balanced Scorecard y análisis de la eficiencia y equidad tarifaria en la Empresa de Acueducto y Alcantarillado de Facatativá. (*Management planning, balanced scorecard and analysis of tariff efficiency and fairness in Water and Sanitation Utility at Facatitavá*). Innovar. (jul/dic) Vol. 16, No. 28.

Guerin Schneider, L. (2001) Introduire la mesure de performance dans la régulation des services d'eau et d'assainissement en France. Instrumentation et organisation. (*Introducing performance measuring in water supply and sanitation regulation in France. Instrumentation and organization.*) PhD Thesis, Gestion - Science de l'eau, ENGREF.

Instituto Nacional de Estadística, Geografía e Informática (INEGI) (2005). "Conteo Nacional de Población y Vivienda 2005".
Consulté sur http://www.inegi.gob.mx/est/contenidos/espanol/sistemas/conteo2005/, février 2008.

Jensen, M. C. (2001). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. Negotiation, Organization and Markets Unit. Harvard Business School. Working Paper No. 01-01. Consulted at http://papers.ssrn.com/abstract=220671

Kaplan R. and Norton D. (1992). The Balanced Scorecard – Measures that Drive Performance". Harvard Business Review, (Jan-Feb), 71-79.

Ménard, C. and Shirley M. (2001). Cities Awash: A Synthesis of the Country Cases", In: M. Shirley (ed), *Thirsting for Efficiency. The Economics and Politics of Urban Water System Reform.* Pergamon/ Elsevier, Chapter 1.

Ménard, C. and Saussier (2002). Contractual Choice and Performance. In: Eric Brousseau and Jean-Michel Glachant (eds), The Economics of Contracts. Theory and Applications, Cambridge University Press, pp. 440-462.

Ménard, C. (2003). L'approche néo-institutionnelle : des concepts, une méthode, des résultats. Cahiers d'Economie Politique, nr. 44: 103-118.

Moisdon, J.-C. (Dir.) (1997). Du mode d'existence des outils de gestion. (*On the mode of existence of management tools*). Séli-Arslan. Paris.

Moisdon, J.-C. (2006). La recherche intervention en gestion: de la prescription à l'énigme. (*On intervention reserch in management : from prescription to enigma*). Colloque Intervention et Savoirs. CNAM, Paris. April 6/7.

Pineda Pablos, N. (2002) "La Política Urbana de Agua Potable en México: del centralismo y los subsidios a la municipalización, la autosuficiencia y la privatización". Rev. Región y Sociedad, may/aug., Vol. 14, No. 24. El Colegio de Sonora. Sonora, México. 41-69

Powell W. W. and DiMaggio P. J. (Ed.). (1991). The New Institutionalism in Organizational Analysis. The University of Chicago Press. Chicago.

Sandoval R. and Palombo A. (2007) Sustainable Water Uses: Infrastructure, Technology and Services. Thematic Base Document. Proceedings of the Sixth Interamerican Dialogue on Water Management. Guatemala City. August 12/17.
http://d6.iwrn.net/images/stories/BASEDOCS/tg4_tbd_eng.pdf

Schwartz K. and Schouten M. (2007). Water as a political good: revisiting the relationship between politics and service provision. Water Policy Vol 9 No 2. IWA Publishing. 119–129

Williamson O. (1996). The Mechanisms of Governance. Oxford University Press. New York.